

Mini Review

Volume 9 Issue 2 - May 2018
DOI: 10.19080/AIBM.2018.09.555759

Adv Biotech & Micro

Copyright © All rights are reserved by Hamed Mohseni Rad

Mini Review of BCG (*Bacillus Calmette-Guérin*) Therapy Prediction by Purified Protein Derivative Skin Test (PPD) in Non-Muscle Invasive Bladder Cancer



Ali Huseinkhani¹ and Hamed Mohseni Rad^{2*}

¹Associate professor of Urology, Ardabil University of medical science, Iran

²Ardabil University of medical science, Iran

Submission: March 10, 2018; **Published:** May 21, 2018

***Corresponding author:** Hamed Mohseni Rad, Urologist, Ardabil University of medical science, Iran, Email: sirhamed@hotmail.com

Abstract

Cancer immunotherapy in bladder superficial cancer evokes immune check points to invoke immunity to destroy cancer cells. PPD hypersensitivity accompanies with longer survival however it may predict more serious complications. More hypersensitive PPD skin test may forecast more side effects and less bladder tumor recurrence.

Keywords: BCG; PPD; Bladder cancer

Introduction

Cancer immunotherapy in bladder superficial cancer evokes immune check points to invoke immunity to destroy cancer cells [1]. BCG binding to basement membrane fibronectin may be crucial in delayed type hypersensitivity and anti-tumor activity [2]. Intravesical BCG may induce infectious complications [3]. Although these infections may diagnosed with PPD- Enzyme linked immune spot assay after BCG vesical instillation [4].

PPD hypersensitivity accompanied with longer survival however it may predict more serious complications [5]. PPD could not foretell the complications in all studies [6]. On the other hand some reported that PPD prior to intra vesical BCG may mend oncological outcome [7]. Moreover, serum BCG antibody elevation may correlate with immunoadjuvant response of intra vesical BCG thrapy [8]. Intra vesical BCG instillation is standard for superficial bladder cancer treatment [9]. More hypersensitive PPD skin test may forecast more side effects and less bladder tumor recurrence [10].

References

1. Saad FT, Hincal E, Kaymakamzade B (2017) Dynamics of immune checkpoints, immune system, and bcg in the treatment of superficial bladder cancer. *Comput Math Methods Med* 3573082: 1-9.
2. Ratliff TL (1989) Mechanisms of action of intravesical BCG for bladder cancer. *Prog Clin Biol Res* 310: 107-122.
3. Pérez Jacoiste Asín MA, Fernández Ruiz M, López Medrano F, Lumbreras C, Tejido A, et al. (2014) Bacillus Calmette-Guérin (BCG) infection following intravesical BCG administration as adjunctive therapy for bladder cancer: incidence, risk factors, and outcome in a single-institution series and review of the literature. *Medicine (Baltimore)* 93(17): 236-254.
4. Heemstra KA, Bossink AW, Spermon R, Bouwman JJ, van der Kieft R, et al. (2012) Added value of use of purified protein derivative-based enzyme-linked immunosorbent spot assay for patients with Mycobacterium bovis BCG infection after intravesical BCG instillations. *Clin Vaccine Immunol* 19(6): 974-977.
5. Bilen CY, Inci K, Erkan I, Ozen H (2003) The predictive value of purified protein derivative results on complications and prognosis in patients with bladder cancer treated with bacillus Calmette-Guerin. *J Urol* 169(5): 1702-1705.
6. Witjes JA, Fransen MP, van der Meijden AP, Doesburg WH, Debruyne FM (1993) Use of maintenance intravesical bacillus Calmette-Guérin (BCG), with or without intradermal BCG, in patients with recurrent superficial bladder cancer. Long-term follow-up of a randomized phase 2 study. *Urol Int* 51(2): 67-72.
7. Niwa N, Kikuchi E, Matsumoto K, Kosaka T, Mizuno R, et al. (2018) Purified protein derivative skin test prior to bacillus Calmette-Guérin therapy may have therapeutic impact in patients with non-muscle-invasive bladder cancer. *J Urol pii: S0022-5347(18): 30006-30005*.
8. Winters WD, Lamm DL (1981) Antibody responses to Bacillus Calmette-Guérin during immunotherapy in bladder cancer patients. *Cancer Res* 41(7): 2672-2676.
9. Zheng YQ, Naguib YW, Dong Y, Shi YC, Bou S, et al. (2015) Applications of bacillus Calmette-Guerin and recombinant bacillus Calmette-Guerin

in vaccine development and tumor immunotherapy. *Expert Rev Vaccines* 14(9): 1255-1275.

10. Kikuchi E, Niwa N, Hayakawa N, Mizuno R, Oya M (2017) The clinical role of purified protein derivative skin test reaction in patients with

non-muscle invasive bladder cancer treated with bacillus-Calmette Guérin. *Journal of Clinical Oncology* 35(15): 4545.



This work is licensed under Creative Commons Attribution 4.0 License
DOI: [10.19080/AIBM.2018.09.555759](https://doi.org/10.19080/AIBM.2018.09.555759)

Your next submission with Juniper Publishers

will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats
(Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission

<https://juniperpublishers.com/online-submission.php>